

## **Preamble for a TFI-OFDM Communications System**

### **ABSTRACT OF THE DISCLOSURE**

System and method for simplifying preamble detection and reducing power consumption in receivers. A preferred embodiment comprises a preamble made up of two sequences, a first sequence that is specified in the time domain and a second sequence that is specified in the frequency domain. The first sequence which comprises multiple copies of a time domain code sequence can allow easy detection of the preamble while the second sequence comprises multiple copies of a frequency domain code sequence and allows easy determination of the frequency response of the communications channel. A hierarchical sequence can be used to allow multi-stage correlation. This can result in a less complex correlator, hence lower power consumption. Piconets can use different code sequences to allow rapid determination of the source of a transmission without requiring the receiver to decode the entire transmission.